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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,262	12/11/2000	Mitsuharu Ohki	112857-224	4709

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EXAMINER

CHANG, JON CARLTON

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/734,262

Applicant(s)

OHKI ET AL.

Examiner

Jon Chang

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following informalities:

The use of the term "juggy" throughout the specification is not understood. See for example, page 1, end of the first paragraph; page 2, lines 14 and 15; page 9, lines 6 and 22; etc.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,379,130 to Wang et al. (hereinafter "Wang").

As to claim 1, Wang discloses a boundary line detection (edge detection) apparatus, comprising:

storage control means for controlling storage of a plurality of pixels inputted thereto (column 6, lines 16-20);

calculation means for calculating differences between pixel values of the pixels whose storage has been controlled by said storage control means (column 6, lines 31-33);

detection means for detecting presence or absence of a boundary from the differences between the pixel values calculated by said calculation means (column 6, lines 34-42; column 6, lines 60-61); and

production means for producing information of a boundary line based on the differences between the pixel values calculated by said calculation means and the information of presence or absence of a boundary detected by said detection means (column 6, lines 40-51; column 6, lines 60-66).

With regard to claim 2, Wang discloses a boundary line detection apparatus according to claim 1, wherein said detection means compares a threshold value and the differences between the pixel values calculated by said calculation means with each other to detect presence or absence of a boundary (column 6, lines 34-35).

Claim 4 is drawn to a method corresponding to claim 1. Remarks analogous to those presented above with regard to claim 1 are applicable.

Claim 5 is drawn to a recording medium on which a computer-readable program is recorded. The computer-readable program corresponds to the apparatus of claim 1 and method of claim 4. The remarks provided above for claims 1 and 4 are therefore applicable. Note on column 7, lines 2-4, the system utilizes a Microtek Scan Maker scanner and an HP Laser Jet IIIp printer. These devices operate in conjunction with a computer. Therefore, a computer is inherent in Wang's system. In order to implement the method in a computer, a computer program would be required, and the computer program would be recorded on a recording medium.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Published Patent Application 7-107294 to Watanabe.

As to claim 1, Watanabe discloses a boundary line detection apparatus (Watanabe detects an edge, paragraph [0039], which corresponds to a boundary, paragraph [0029]), comprising:

calculation means for calculating differences between pixel values of pixels (paragraphs [0039]-[0040]);

detection means for detecting presence or absence of a boundary from the differences between the pixel values calculated by said calculation means (paragraph [0040]); and

production means for producing information of a boundary line based on the differences between the pixel values calculated by said calculation means and the information of presence or absence of a boundary detected by said detection means (paragraph [0040]; the information is e.g., the edge position and the degree of steepness of an edge).

Watanabe does not explicitly disclose storage control means for controlling storage of a plurality of pixels inputted. The Examiner takes Official Notice that storage of pixels, and control means for controlling storage of the pixels is well known in the art. It would have been obvious to one of ordinary skill in the art to implement pixel storage and storage control in Watanabe's invention because it would have allowed for more efficient processing of the pixels, e.g., pixels would be held in order to calculate their difference.

Regarding claim 2, Watanabe discloses a boundary line detection apparatus according to claim 1, wherein said detection means compares a threshold value and the differences between the pixel values calculated by said calculation means with each other to detect presence or absence of a boundary (paragraph [0040]).

Claim 4 is drawn to a method corresponding to claim 1. Remarks analogous to those presented above with regard to claim 1 are applicable.

Claim 5 is drawn to a recording medium on which a computer-readable program is recorded. The computer-readable program corresponds to the apparatus of claim 1 and method of claim 4. The remarks provided above for claims 1 and 4 are therefore applicable. Watanabe does not disclose a recording medium or computer-readable program. However, the Examiner takes Official Notice that the use of computers is well known in the art. Given their wide availability, low cost, and flexibility, it would have been obvious to one of ordinary skill in the art to utilize a computer to implement Watanabe's invention. In doing so, the computer-readable program and the recording medium would be inherent in the combination.

Regarding claim 6, Watanabe discloses an image processing apparatus, comprising:

detection means for detecting presence or absence of a boundary line in the proximity of pixels (paragraph [0040]);

position calculation means for calculating positions of the boundary line with respect to the pixels (paragraph [0040]);

weighting means for weighting the pixel values of the pixels in accordance with the positions calculated by said position calculation means (paragraph [0041]); and

outputting means for outputting the pixels weighted by said weighting means (paragraph [0041], and Fig.1, output).

Watanabe does not explicitly disclose storage control means for controlling storage of a plurality of pixels inputted. The Examiner takes Official Notice that storage of pixels, and control means for controlling storage of the pixels is well known in the art.

It would have been obvious to one of ordinary skill in the art to implement pixel storage and storage control in Watanabe's invention because it would have allowed for more efficient processing of the pixels, e.g., pixels would be held in order to calculate their difference.

Claim 7 is drawn to a method corresponding to claim 6. Remarks analogous to those presented above with regard to claim 6 are applicable.

Claim 8 is drawn to a recording medium on which a computer-readable program is recorded. The computer-readable program corresponds to the apparatus of claim 6 and method of claim 7. The remarks provided above for claims 6 and 7 are therefore applicable. Watanabe does not disclose a recording medium or computer-readable program. However, the Examiner takes Official Notice that the use of computers is well known in the art. Given their wide availability, low cost, and flexibility, it would have been obvious to one of ordinary skill in the art to utilize a computer to implement Watanabe's invention. In doing so, the computer-readable program and the recording medium would be inherent in the combination.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Watanabe and U.S. Patent 4,550,434 to Shimada et al. (hereinafter "Shimada").

Regarding claim 3, Watanabe discloses a boundary line detection apparatus according to claim 1, wherein the information of the boundary line produced by said production means includes a direction of the boundary line (paragraph [0041]; the

steepness of the boundary implies something about its direction). Watanabe does not disclose that the information includes a length of the boundary line and a start point and an end point of the boundary line. However, this is well known in the art. For example, Shimada teaches utilizing the start point and end point, as well as the length of a boundary line (column 4, lines 53-54, column 6, lines 40-41). Shimada's technique is advantageous in that it avoids problems due to such things as overlapping lines (column 1, lines 35-56). Therefore, it would have been obvious to one of ordinary skill in the art to modify Watanabe according to Shimada.

References Cited

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,572,603 to Koike teaches as prior art determining a pixel to be an edge pixel by comparing the pixel to bordering pixels. A pixel is determined to be an edge pixel when intensity difference between the pixel and bordering pixels exceeds a predetermined value. A black pixel is output for an edge pixel determination.

U.S. Patent 6,415,049 to Yanagita et al. teaches detecting candidate edge points by calculating the difference between adjacent pixels. The position at which the absolute value of the difference value is larger than a predetermined threshold value is the candidate edge points.


U.S. Patent Application Publication 2002/0006231 to Jayant et al. teaches detecting an edge by determining if the difference between the intensity of the subject pixel and the intensity of an adjacent pixel is greater than a predetermined threshold.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
October 20, 2003